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## No. XVI.

## STAND FOR A TELESCOPE.

*The SILVER MEDAL was presented to Mr. J. CUTHERBERT, 58 Brook Street, Lambeth, for his Stand for a Telescope.*

58 Brook Street, West Square, Lambeth,  
SIR, February 11th, 1834.

HAVING been long in want of a steady universal telescope-stand, I have constructed one which I find by practice fully to answer my wishes, and can be made at a small expense compared to other rack-work stands. Mr. Pond, Astronomer Royal, has done me the favour of giving it a trial, and, being quite satisfied of its effectiveness, has ordered one for the observatory.

I shall feel great pleasure in submitting it to the Society of Arts for their inspection, and will attend to explain the principle when the Committee may please to appoint.

I am, Sir, &c. &c.  
*A. AIKIN, Esq.* JOHN CUTHERBERT.  
*Secretary, &c. &c.*

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Royal Observatory, 28th Jan. 1834.

SIR,  
WE have given your new stand a fair trial, and it appears to me to answer admirably; so much so that I wish much to have one for the use of the Royal Observatory. Both the motions are very perfect, convenient, and pleasant in

practice ; and it is perfectly free from shake or tremour. It may be advantageously adapted and fixed on a tripod, and can, I conceive, without much difficulty, be placed in an equatorial position.

I am, Sir, &c. &c.

*Mr. J. CUTHBERT,  
Lambeth.*

J. POND.

Plate IV., fig. 7, is a perspective view of the stand, about one-tenth of the real size : it is chiefly formed of wood. *a* the flat circular top of a strong tripod-stand ; *b* a strong circular base, movable on *a* by three rollers ; one is seen at *c*. The base *b* turns round concentric on *a*, a screw through *a* into *b* forming the centre of motion, and holding them together. A tablet *dd* is fixed above *b*, on the four pillars *e*, *e*, *e*, *e* ; three sides are braced by cross-bars. *ff* the frame or cradle in which the telescope is laid ; it is jointed to *d* in front by strong hinges *g*. At the other end of the cradle there is a hole bored quite through, in which a tube, fig. 8, is inserted. This tube has a flanch at each end ; one of them screws off for convenience of putting in. A wire, fig. 9, passes through the tube ; it is made into a screw at each end to receive the screw-nuts *h h*. The quick elevation is given by this screw ; it passes through the slits in the long bars *ii*, and is bound fast at any required height by the nuts. It is lifted up by the hands holding the nuts ; but for lowering, a contrivance is here added which makes it descend progressively as the nuts are loosened. This is effected by making the bars *ii* increase regularly in thickness downwards, as shewn in fig. 10 ; so that while the nuts are being loosened, that end descends gradually to thicker parts of the bars, and stops quite softly at any part till the nuts are still farther loosened.

There is great convenience in the particular construction of the screw and pipe ; first, the screw being loose, whichever nut is bound or loosened, both are equally tight or loose ; and when the two bars *i i* are bound fast against the flanches of the tube, this tube can turn in the cradle during the slow motion. For the slow motion a frame *j*, like the letter H, shewn nearly separate in the top view, fig. 11, and in front in fig. 12, is laid on the base *b* ; it slides to and fro outside the pillars *ee*. Against these pillars are screwed two bars *kk* for the purpose of holding the long screw *l*. A brass nut *m* is fixed in the middle of the frame *j* through which the screw passes, therefore turning the screw slides the frame ; and, as the lower ends of the bars *ii* are jointed to the front of this frame at *nn*, it gives the slow motion to the telescope. Two pieces of wood *oo* are screwed to the front pillars *ee* ; under these the frame *j* slides, they serve to keep it down whilst raising the telescope quickly. The quick horizontal motion is obtained by rolling the base *b*, fig. 1, round on the top *a*; then, by fixing the clamp *p*, the screw *q* will give the slow motion, the head *r* of the clamp through which the screw passes being a swivel, and so is the collar *s* by which the screw is attached to the base *b*.

One end of a leather strap *t* is fixed to the cradle ; it passes over the telescope, and then through a hole in the right side of the cradle, where, on being pulled tight, it is bound fast by the screw *u*, there being a metal plate which the screw presses against the strap. *v* is an additional piece to support a shorter telescope ; it slides between two guide-ridges *ww*, fig. 14.

A finder *xx* is attached to the cradle, with a small lateral adjustment in front, to make it suit any telescope. This is shewn in figs. 13 and 14. *yy*, two slips of brass

screwed to the front edge of the cradle ; under these the plate *z* can slide up and down, the screw 1 serving to bind it fast. The plate *z* is bent at right angles, having on it a dovetail, in which the plate 2 can slide, right or left, and the screw 3 serves to bind it fast. The object-end of the finder passes through the hole 4, whilst the front end lodges in the sliding-plate 2; hence it can be moved to agree with any telescope. The telescope being directed to a distant object, the cross-wires of the finder are brought on the same, and then both instruments will be parallel.

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## No. XVII.

MACHINE FOR GRINDING AND POLISHING  
LENSES AND SPECULA FOR TELESCOPES.

*The LARGE GOLD MEDAL was presented to RICHARD GREENE, M.D., of Cork, for his Machine for Grinding and Polishing the Mirrors of Telescopes and Lenses for Achromatic Object-Glasses, a Model of which has been placed in the Society's Repository.*

32 Cirencester Place, Fitzroy Square,  
SIR, March 31st, 1834.

THE model which I have the honour to lay before the Society is of my own construction, and being made up in great haste, is not as exact as I could wish in the proportion of its smaller parts, and the diameter of the fly-wheel is fully one-fourth less than it should be, from my not having a larger one at hand ; it, however, accurately